

Observations of Comet *a* 1899 (*Swift*) made at the Royal Observatory, Greenwich.
(Communicated by the Astronomer Royal.)

The observations were made with the Sheepshanks Equatorial, aperture 6·7 inches, by taking transits over two cross-wires at right angles to each other, and each inclined 45° to the parallel of declination. Magnifying power, 55.

| Greenwich Mean Solar Time. | Observer. | ♂—★ R.A. m s | Corr. for Refraction. s | Log. Factor of Parallax. | ♂—★ N.P.D. " | Corr. for Refraction. " | Log. Factor of Parallax. | No. of Comps. | Apparent R.A. of Comet. h m s | Apparent N.P.D. of Comet. ° ' " | Comp Star. |
|----------------------------------|-----------|-----------------|-------------------------------|--------------------------------|-----------------|-------------------------------|--------------------------------|------------------|--|--|---------------|
| 1899. May 6 15 16 25 | W. | —0 5'03 | —0'02 | 9'6152 | —9 29'7 | —0'1 | 0'7653 | 6 | 23 49 21'69 | 62 32 12'5 | <i>a</i> |
| 7 14 47 12 | " | +0 40'42 | —0'04 | 9 6220 | —14 29'1 | —0'4 | 0'7781 | 6 | 23 45 14'09 | 61 28 41'0 | <i>b</i> |

Notes.

These observations are corrected for refraction, but not for parallax. They are also corrected for the error of inclination of the wires and for the motion of the comet.

May 6.—Comet large and very bright, visible in twilight. Circular, about 5' in diameter, with a central condensation.
May 7.—There was a well-defined nucleus.

The initial W. is that of Mr. Witchell.

| Comparison Stars. | | | |
|---|----------------------|------------------------|--|
| Star's Name. | Assumed R.A. 1899'o. | Assumed N.P.D. 1899'o. | Authority. |
| <i>a</i> B.D. + 27° No. 4640 | 23 49 25'65 | 62 41 43'6 | Cambridge Astr. Gesell. Catalogue, 14341. |
| <i>b</i> 79 Pegasi | 23 44 32'59 | 61 43 11'5 | Greenwich Ten-Year Catalogue, 1890 (MSS.). |
| Royal Observatory, Greenwich: 1899 June 9. | | | |

Equatorial Comparisons of Jupiter, Uranus and Neptune with certain Stars in Newcomb's Standard Catalogue. By John Tebbutt.

The accompanying observations have been made with the 8-inch equatorial refractor and filar-micrometer, and under favourable conditions. In the comparisons of *Jupiter* the first and second limbs were both observed at each transit, and the north and south limbs alternately; in those of *Uranus* the planet's centre was observed on April 18 and May 16, and on each intermediate date the first and north and the second and south limbs alternately; the centre of *Neptune* was observed throughout. In the reduction to the centres the data of the *Nautical Almanac* were employed. The differential co-ordinates have been corrected for refraction and a small error in the perpendicularity of the micrometer threads. The adopted mean places of the comparison stars are the results of an elaborate investigation by Mr. C. J. Merfield, F.R.A.S., from all available catalogues, and are as follows:—

| Star. | Epoch. | Mean R.A. | | | No. of Cata- logue. | No. of Obs. | Mean N.P.D. | | | No. of Cata- logue. | No. of Obs. |
|--------------------|--------|-----------|----|-------|---------------------------|-------------------|-------------|----|------|---------------------------|-------------------|
| | | h | m | s | | | ° | ' | " | | |
| η Virginis | 1898.0 | 12 | 14 | 41.20 | 44 | 1161 | 90 | 6 | 0.0 | 41 | 731 |
| ω^1 Scorpii | 1898.0 | 16 | 0 | 50.39 | 18 | 80 | 110 | 23 | 35.5 | 18 | 76 |
| ω^2 Scorpii | 1898.0 | 16 | 1 | 25.35 | 22 | 118 | 110 | 35 | 36.1 | 21 | 108 |
| 114 (o) Tauri | 1899.0 | 5 | 21 | 34.10 | 25 | 99 | 68 | 8 | 58.2 | 23 | 1 |

The planet observations are compared respectively with the mean noon ephemeris of *Jupiter* and with the transit ephemerides of *Uranus* and *Neptune* of the *Nautical Almanac*. Weighting the results according to the number of comparisons in each we have the following for the mean corrections to the *Nautical Almanac*:—

| | | |
|----------------------------------|-------------------------|-------------------------|
| From Jupiter and η Virginis | $\Delta R.A. = +0.09^s$ | $\Delta N.P.D. = -0.5'$ |
| „ Uranus and ω^1 Scorpii | „ -0.20 | „ $+0.8$ |
| „ Uranus and ω^2 Scorpii | „ -0.20 | „ $+0.3$ |
| „ Neptune and 114 (o) Tauri | „ -0.32 | „ $+2.6$ |